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| 10/050,476 | 01/15/2002 | Lixiao Wang | 1001.1445101 | 6164 |

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| EXAMINER |
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GILBERT, ANDREW M

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| ART UNIT | PAPER NUMBER |
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3767

DATE MAILED: 07/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|------------------------------------|--|
| Office Action Summary | Application No. 10/050,476 | Applicant(s) WANG ET AL. | |
| | Examiner Andrew M. Gilbert | Art Unit 3767 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 10-12, 16-19 and 21-23 is/are pending in the application.
- 4a) Of the above claim(s) 18 and 19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10-12, 16-17, 21-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Acknowledgements

1. This office action is in response to the reply filed on 6/16/2006.
2. In the reply, claims 1-8, 10-12, 16-19, 21-23 are pending and claims 18 and 19 being previously withdrawn.

Specification

3. The disclosure is objected to because of the following informalities: In paragraph 46 of the specification LICA 44 is defined as tris(2-ethylene diamino) ethylate. However, in paragraph 42 of the specification LICA 44 is defined as neopentyl (dialy) oxy, tri (dioctyl) pyro-phosphato titanate. The Examiner is unclear as to which chemical compound is actually LICA 44.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-8, 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peters et al (5549552) in view of Krahne et al (5470923). In reference to claims 1-5, Peters et al discloses a medical balloon catheter device (Figs 2) having a metallic hypotube (33), a polymeric tubular member (34) disposed over at least a portion of the metallic hypotube forming a lap joint (Fig 2; col 7, lns 14-23), a coupling adhesive agent

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disposed between the metallic hypotube and the polymeric tubular member within the lap joint (col 7, lns 14-23), where the polymeric tube is disposed on the outside of the metallic hypotube (Fig 3A), and the polymeric tube is disposed on the inside of the metallic hypotube (Fig 3B). However, Peters et al does not disclose that the coupling agent is a functionalized titanate.

6. Krahnke et al teaches that it is known to have titanate derivatives (col 7, ln 57-col 8, ln 3) used as coupling agents (col 8, lns 46-59; col 9, lns 11-19) in a medical grade adhesive (col 1, ln 19-23, 26) for the purpose of adhering an object to a surface by a medical grade adhesive. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the coupling agent as taught by Peters et al with the titanate derivative coupling agent as taught by Krahnke et al for the purpose of adhering an object to a surface by a medical grade adhesive.

7. In reference to claims 6-8, Peters et al and Krahnke et al disclose the invention substantially as claimed except for expressly disclosing that the coupling agent is in liquid, paste, or powder form. At the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to have the coupling agent be a liquid, paste, or powder form because the Applicant has not disclosed that the coupling agent being in liquid, paste, or powder form provides an advantage, is used for a particular purpose, or solves a stated problem. Furthermore, one of ordinary skill in the art would have expected the Applicants invention to perform equally well with coupling agent of Peters et al and Krahnke et al because the coupling agent performs the same function as bonding a metallic and polymeric surface together.

Therefore, it would have been an obvious matter of design choice to modify the coupling agent of Peters et al and Krahne et al to obtain the invention as specified in claims 6-8.

8. In reference to claims 10-12, Peters et al and Krahne et al disclose the invention substantially as claimed except for expressly disclosing that the functionalized titanate is LICA-38, LICA-44, or LICA-97 (chemical trade name used). At the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to have the functionalized titanate be LICA-38, LICA-44, or LICA-97 because the Applicant has not disclosed that having the functionalized titanate be LICA-38, LICA-44, or LICA-97 provides an advantage, is used for a particular purpose, or solves a stated problem. Furthermore, one of ordinary skill in the art would have expected the Applicants invention to perform equally well with functionalized titanate of Peters et al and Krahne et al because the functionalized titanate performs the same function of bonding a metallic and polymeric surface together. Therefore, it would have been an obvious matter of design choice to modify Peters et al and Krahne et al to obtain the invention as specified in claims 10-12 and 21-23.

9. Claims 16-17 and 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peters et al and Krahne et al in further view of Ichinose et al (5681402). Peters et al and Krahne et al disclose the invention substantially as claimed except for a functionalized titanate coupling agent having a first functional group providing bonding adhesion to the metallic member and a second functional group providing bonding adhesion to the polymeric member. Krahne discloses a medical grade coupling agent that is capable of being used to bond to metallic and

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polymeric members (col 9, Ins 11-19) and that is hydrolyzable (col 8, In 1). However, Khahnke is silent as to the functionalized titanate coupling agent's first and second functional group providing adhesion to a metallic member and a second functional group providing adhesion to a polymeric member.

10. Ichinose et al teaches that it is known to have a functionalized titanate derivative coupling agent having a first functional group providing a hydrophilic portion with bonding adhesion to the metallic member and a second functional group with organic functional group portion providing bonding adhesion to the polymeric member for the purpose of controlling the surface between the metallic and polymer to firmly couple the two together (col 13, Ins 7-47; especially Ins 28-33). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the coupling agent as taught by Peters et al and Krahne et al with the functional groups as taught by Ichinose et al for the purpose of controlling the surface between the metallic and polymer to firmly couple the two together.

11. In reference to claims 21-23, Peters et al, Krahne et al, and Ichinose et al disclose the invention substantially as claimed except for expressly disclosing that the functionalized titanate is LICA-38, LICA-44, or LICA-97 (chemical trade name used). At the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to have the functionalized titanate be LICA-38, LICA-44, or LICA-97 because the Applicant has not disclosed that having the functionalized titanate be LICA-38, LICA-44, or LICA-97 provides an advantage, is used for a particular purpose, or solves a stated problem. Furthermore, one of ordinary skill

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in the art would have expected the Applicants invention to perform equally well with functionalized titanate of Peters et al, Krahne et al, and Ichinose et al because the functionalized titanate performs the same function of bonding a metallic and polymeric surface together. Therefore, it would have been an obvious matter of design choice to modify Peters et al, Krahne et al, and Ichinose et al to obtain the invention as specified in claims 10-12 and 21-23.

Response to Arguments

12. Applicant's arguments with respect to claims 1-8, 10-12, 16-17, 21-23 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew M. Gilbert whose telephone number is (571) 272-7216. The examiner can normally be reached on 8:30 am to 5:00 pm Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Sirmons can be reached on (571)272-4965. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Andrew Gilbert

KEVIN C. SIRMONS
SUPERVISORY PATENT EXAMINER

